

Abstract

A method and an apparatus for interfering with pathological cells survival processes, i.e. inducing directly or indirectly apoptosis, on living pathological cells, by using magnetic fields without adversely affecting normal cells. Static (S) and extremely low frequency (ELF) magnetic fields are used having low intensity comprised between 1 and 100 mT, preferably comprised between 1 and 30 mT. In particular SELF fields are used which are different sequences of S and/or ELF fields, i.e. S fields followed by ELF fields, ELF fields followed by S fields, S and ELF field together, as well as the presence of S or ELF fields alone, said ELF fields having a field frequency comprised between 1 and 1000 Hz. An apparatus for carrying out the method comprises means for generating static magnetic (S) fields crossing a working environment and/or means for generating electromagnetic extremely low frequency (ELF) fields over the working environment in addition to the S fields. Means are provided for modulating the S fields associated to the S fields generating means and varying the intensity of the S fields from 1 to 100 mT, preferably between 1 to 30 mT according to a predetermined function. Means may also be provided for modulating the ELF fields associated to the ELF fields generating means and imposing to the ELF fields a frequency between 1 and 1000 Hz with intensity comprised between 1 to 100 mT, preferably between 1 and 30 mT according to a predetermined function.